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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,626

04/25/2005

Friedrich Boecking

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EXAMINER

MCGRAW, TREVOR EDWIN

ART UNIT

PAPER NUMBER

3752

MAIL DATE

DELIVERY MODE

08/22/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/532,626		BOECKING, FRIEDRICH	
	Examiner		Art Unit	
	Trevor McGraw		3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-19,25,26 and 28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-19,25,26 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 8-19, 25-26 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Stoecklein et al. (US Patent Publication 2002/0134853).

In regard to claims 8-19, 25-26 and 28 Stoecklein et al. teaches a fuel injection device for an internal combustion engine where the device comprises a control chamber (58), a control valve (76) that is movable in three positions-two end positions and at least one intermediary position that is located between a high pressure side (52) and a low pressure side (66") and operates to open or block communication of the control chamber (58) with the low pressure side (66").

Stoecklein et al. also teaches an outlet throttle (66") that is located between the control valve (76) and the low pressure side (66") with a piezoelectric actuator (68) means to move the control valve (68) between all three positions where the control valve blocks communication between the low pressure side and the control chamber in its first position, communication between the control chamber and the low pressure side via the first outlet conduit (66) when the control valve is in its second position and

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communication between the control chamber and the low pressure side via a second outlet conduit (74) when the control valve is in its third position. The fuel injection device of Stoecklein et al. further teaches a fuel injection device having an outlet throttle (86) of the second outlet conduit (74) that has a higher throttle resistance than the outlet throttle (66") on the low pressure side. The control chamber also communicates with the low-pressure side via the second outlet conduit (74) as well. The control valve of Stoecklein et al., is embodied as a double seat valve having a valve body (76) that is axially adjustable within a valve chamber (78) between two valve seats (80 and 82) where valve seat (82) communicates with the first outlet conduit (66) and the second valve seat (80) communicates with the low-pressure side, and the valve chamber (78) communicates with the second outlet conduit (74).

The control chamber (58) of Stoecklein et al. is connected to the high-pressure side (52) via an inlet throttle (60) that has a lesser throttle resistance than the outlet throttle (86) of the second outlet conduit (74). The second outlet conduit (74) of Stoecklein et al. additionally provides for a second, alternative flow path from the control chamber (58) to the low-pressure side when the control valve (76) is in a third position.

Response to Arguments

Applicant's arguments filed 06/08/2007 have been fully considered but they are not persuasive.

Applicant's assertion that there is no communication between the control chamber (58) and the valve chamber (78) via the second outlet conduit (74) is not true.

Examiner brings to Applicant's attention that the control chamber (58) communicates with the valve chamber (78) via a communing flow path where fuel can pass from the control chamber (58) through the first inlet throttle (60) and the second outlet conduit (74) through throttle (86) and vice versa. Examiner notes that there is a flow path where fuel does communicate between the valve chamber (78) and the control chamber (58) and further asserts that the Stoecklein et al. reference does teach an outlet conduit (66") being located between the control valve and the low pressure side and that during the fuel injection process an imparted reactionary force is transmitted from the control chamber to the low pressure side through the valve chamber where communication or open path of flow exists between the control chamber and valve chamber through throttles and an outlet conduit. Applicant is directed to column 4 line 35 through column 6 line 67 of Stocklein et al. (US PG PUB 2002/0134853 now US 6,814,302) which clearly shows the communication of the valve chamber and the control chamber during the fuel injection process and how fuel can flow out of the control chamber.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "Stoecklein et al. the bypass conduit 74 is not a outlet conduit for the control chamber 58) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Furthermore, Examiner views Applicant's limitation "communication", "communicating" and derivations thereof to be capable of being open to one another.

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Examiner makes of note that none of the conduit, throttles and chambers are exclusively communicating directly with each other in any of the positions of Applicant's control valve actuator.

On page 10 of the arguments, Applicant states that "the pressure of the control chamber "58" in Stoecklein is never at a pressure which is higher than the pressure in chamber '44'." Examiner brings to Applicant's attention that if the injection is to be terminated, the valve (70) is brought to a closed position which stops the outflow of fuel through the outlet conduit. Fuel continues to flow from the chamber "44" into the control chamber "58" through the conduit "62" as a result of the pressure in the control chamber "58" reaches a level at which the closing force (pressure) builds up and overcomes an opening force (pressure in chamber "44" that overcomes closing pressure in "58" and forces the nozzle to close onto needle seat "36". This previously stated presents evidence where the pressure in the control chamber "58" is higher than pressure in the chamber "44". Thus, Applicant's assertion that the pressure in chamber "58" is never higher than the chamber "44" is completely and entirely false as if it were true then the injector needle would remain open at all times and does in fact teach the function recited in the "whereby" clause of Claim 28. The pressure within the control chamber "58" has to be overcome by a higher pressure in order for the valve to open. When the pressure within the control chamber "58" builds up, the needle closes as the pressure in control chamber "58" is higher than the chamber "44". When the pressure within chamber "44" recedes, the injection needle closes as the pressure in control chamber

"58" is now higher. Any fuel present within conduit "62" could be forced out into "44" due to the increased pressure in the control chamber "58".

Examiner further makes note that if a dye indicator or fuel additive was put into the fuel system, the dye indicator or fuel additive would be present in each part of the Stocklein et al. reference meaning that the dye indicator or fuel additive would be able to flow through the fuel injector control chamber, all conduits, throttles and other corresponding gaps, apertures and openings that permit a fluid path for fuel to flow into under a fuel injection process where high pressure fuel is introduced into a fuel injector on a high pressure side and flows either out of the injection openings into a combustion chamber or is retained in the injector body to flow back to a low pressure side when an actuator that induces an injection process is seated on a valve seat in at least a third position. Thus, proving that communication exists between all fuel injector components of the Stocklein et al. reference. For these above stated reasons, Examiner has maintained the rejection held against the Claims as described in the Office Action mailed 09/25/2006 and 03/08/2007.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

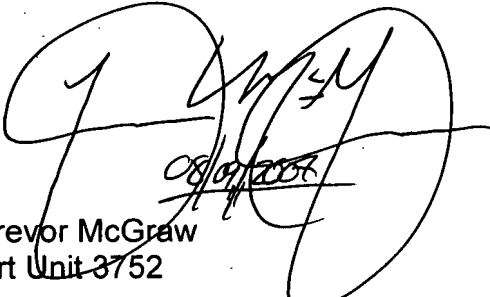
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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

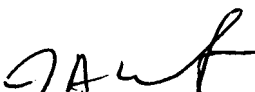
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trevor McGraw whose telephone number is (571) 272-7375. The examiner can normally be reached on Monday-Friday (2nd & 4th Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on (571) 272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Trevor McGraw
Art Unit 3752

TEM


Joseph A. Kaufman
Primary Examiner
8/20/07